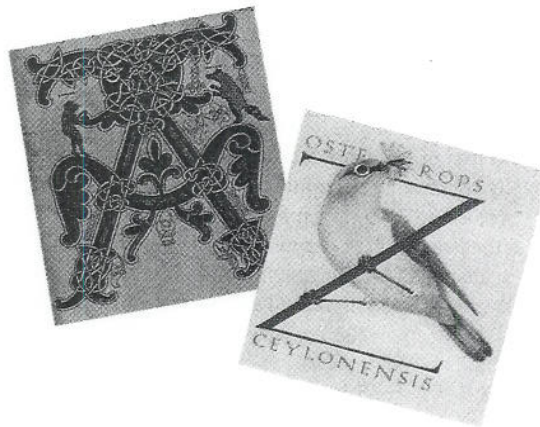


EXHIBIT 4

The
**American
Heritage[®] Dictionary**
of the English Language

FOURTH EDITION



HOUGHTON MIFFLIN COMPANY
Boston New York

ACT² *abbr.* Australian Capital Territory

Ac·tae·on (āk-tē'ən) *n.* Greek Mythology A young hunter who, having inadvertently observed Artemis while she was bathing, was turned by her into a stag and killed by his own dogs.

ACTH (ā'sē-tē-āch') *n.* A hormone produced by the anterior lobe of the pituitary gland that stimulates the secretion of cortisone and other hormones by the adrenal cortex. Also called *adrenocorticotropin*, *corticotropin*. [A(DRENO)C(ORTICO)T(ROPIC)H(ORMONE).]

ac·tin (āk'tīn) *n.* A protein found in muscle that together with myosin functions in muscle contraction. [Latin *actus*, motion; see ACT + -IN.]

actin- *pref.* Variant of **actino-**.

ac·ti·nal (āk'tī-nāl, āk-tī'-) *adj.* Of, relating to, or located on the part of a radially symmetric animal from which the tentacles radiate or the side where the oral area is found. —**ac·ti·nal·ly** *adv.*

act·ing (āk'tīng) *adj.* 1. Temporarily assuming the duties or authority of another. See synonyms at **temporary**. 2a. That contains directions for use in a dramatic performance: *the play's acting text*. b. That is appropriate for dramatic performance: *an acting comedy*. ♦ *n.* 1. The occupation of an actor or actress. 2. Performance as an actor or actress. 3. False behavior; pretense.

ac·tin·i·a (āk-tīn'ē-ə) also **ac·tin·i·an** (-ən) *n., pl. -i·ae* (-ē-ē') also **-i·ans** A sea anemone or a related animal. [New Latin *Actinia*, genus name, from Greek *aktis*, *aktin-*, ray. See ACTINO-.]

ac·tin·ic (āk-tīn'ik) *adj.* Of, relating to, resulting from, or showing actinism. —**ac·tin·i·cal·ly** *adv.*

actinic ray *n.* Photochemically active radiation, as of the sun.

ac·ti·nide (āk'tā-nīd') *n.* Any of a series of chemically similar, radioactive elements with atomic numbers ranging from 89 (actinium) through 103 (lawrencium). [ACTIN(IUM) + -IDE.]

ac·ti·nism (āk'tā-nīz'm) *n.* The intrinsic property in radiation that produces photochemical activity.

ac·tin·i·um (āk-tīn'ē-əm) *n.* Symbol **Ac** A radioactive element found in uranium ores, used in equilibrium with its decay products as a source of alpha rays. Its longest lived isotope is Ac 227 with a half-life of 21.6 years. Atomic number 89; melting point 1,050°C; boiling point (estimated) 3,200°C; specific gravity (calculated) 10.07; valence 3. See table at **element**. [From Greek *aktis*, *aktin-*, ray (from its radioactivity). See ACTINO-.]

actino- or **actin-** *pref.* 1. Radial in form: *actinoid*. 2. Actinic radiation: *actinometer*. [From Greek *aktis*, *aktin-*, ray.]

ac·ti·noid (āk'tā-noid') *adj.* Having a radial form, as a starfish.

ac·tin·o·lite (āk-tīn'ō-līt') *n.* A greenish variety of amphibole.

ac·ti·no·mere (āk-tīn'ō-mēr') *n.* One of the segments forming the body of a radially symmetric animal.

ac·ti·no·meter (āk'tā-nōm'ē-tēr) *n.* Any of several radiometric instruments, such as a pyrheliometer, used chiefly for meteorological measurements of terrestrial and solar radiation. —**ac·ti·no·met·ric** (-nō-mēt'rik), **ac·ti·no·met·rical** *adj.* —**ac·ti·no·met·ry** *n.*

ac·ti·no·morph·ic (āk'tā-nō-mōr'fīk) also **ac·ti·no·mor·phous** (-fəs) *adj.* Botany Capable of being divided into equal halves along any diameter, as the flowers of the rose or tulip; radially symmetrical. —**ac·ti·no·mor·phy** *n.*

ac·ti·no·my·ces (āk'tā-nō-mī'sēz') *n., pl. actinomyces* Any of various filamentous, mostly anaerobic microorganisms of the genus *Actinomyces*, which includes the causative agents of actinomycosis. [New Latin *Actinomyces*, genus name: ACTINO- + Greek *mukēs*, fungus.]

ac·ti·no·my·cete (āk'tā-nō-mī'sēt', -mī-sēt') *n.* Any of various filamentous or rod-shaped, often pathogenic microorganisms of the order Actinomycetales that are found in soil and resemble bacteria and fungi. —**ac·ti·no·my·ce·tal** (-mī-sēt'l), **ac·ti·no·my·ce·tous** *adj.*

ac·ti·no·my·cin (āk'tā-nō-mī'sīn) *n.* Any of various red, often toxic, polypeptide antibiotics obtained from soil bacteria.

actinomycin D *n.* See **dactinomycin**.

ac·ti·no·my·co·sis (āk'tā-nō-mī-kō'sis) *n.* An inflammatory disease of cattle, hogs, and sometimes humans, caused by microorganisms of the genus *Actinomyces* and characterized by lumpy tumors of the mouth, neck, chest, and abdomen. Also called *lumpy jaw*. —**ac·ti·no·my·cot·ic** (-kōt'ik) *adj.*

ac·ti·non (āk'tā-nōn') *n.* A radioactive, inert, gaseous isotope of radon, with a half-life of 3.92 seconds. [ACTIN(IUM) + -ON².]

ac·ti·no·u·ra·ni·um (āk'tā-nō-yō-rā'nē-əm) *n.* The isotope of uranium with mass number 235, fissionable with slow neutrons. [ACTIN(IUM) + URANIUM.]

ac·tion (āk'shan) *n.* 1. The state or process of acting or doing: *The medical team went into action*. 2. Something done or accomplished; a deed. See Usage Note at **act**. 3. Organized activity to accomplish an objective: *a problem requiring drastic action*. 4. The causation of change by the exertion of power or a natural process: *the action of waves on a beach*; *the action of a drug on blood pressure*. 5. A movement or a series of movements, as of an actor. 6. Manner of movement: *a horse with fine action*. 7. Habitual or vigorous activity; energy: *a woman of action*. 8. Behavior or conduct. Often used in the plural. 9a. The operating parts of a mechanism. b. The manner in which such parts operate. c. The manner in which a musical instrument can be played; playability: *a piano with quick action*. 10. A change that occurs in the body or in a bodily organ as a result of its functioning. 11. A physical change, as in position, mass, or energy, that an object or a system undergoes. 12. The series of events and episodes that form the plot of a story or play. 13. The appearance of animation of a figure in painting or sculpture. 14. Law A judicial proceeding whose purpose is to obtain relief at the hands of a court. 15a. Armed encounter; combat: *missing in action*. b. An engagement between

troops or ships: *fought a rear-guard action*. 16. The most important or exciting work or activity in a specific field or area: *always heads for where the action is*. —**ac·ti·on·less** *adj.*

ac·ti·on·a·ble (āk'shā-nā-bəl) *adj.* Giving cause for legal action: *an actionable statement*. —**ac·ti·on·a·bly** *adv.*

action painting *n.* A style of abstract painting that uses techniques such as the dribbling or splashing of paint to achieve a spontaneous effect. —**action painter** *n.*

action potential *n.* A momentary change in electrical potential on the surface of a nerve or muscle cell that takes place when it is stimulated, especially by the transmission of a nerve impulse: *Stimulating a nerve fiber causes an action potential to spread across the nerve cell, making it contract*.

Ac·ti·um (āk'shē-əm, -tē-) A promontory and ancient town of western Greece. In 31 B.C. it was the site of Octavian's naval victory over Mark Antony and Cleopatra. As a result of the battle, Egypt came under Roman control and Octavian (later Augustus) was established as the ruler of Rome.

Ac·ti·vase (āk'tā-vās') A trademark used for a preparation of tissue plasminogen activator.

ac·ti·vate (āk'tā-vāt') *tr.v. -vat·ed, -vat·ing, -vates* 1. To set in motion; make active or more active: *The motor is activated by a battery*. 2. To organize or create (a military unit, for example): *activate the National Guard*. 3. To treat (sewage) with aeration and bacteria to aid decomposition. 4. Chemistry To accelerate a reaction in, as by heat. 5. Physics To make (a substance) radioactive. 6. Biology To convert (certain biological compounds) into biologically active derivatives. —**ac·ti·va·tion** *n.* —**ac·ti·va·tor** *n.*

ac·ti·vated charcoal (āk'tā-vā'tīd) *n.* Highly absorbent carbon obtained by heating granulated charcoal to exhaust contained gases, resulting in a highly porous form with a very large surface area. It is used primarily for purifying gases by adsorption, solvent recovery, or deodorization and as an antidote to certain poisons. Also called *activated carbon*.

activation analysis *n.* A method for analyzing a material for its component chemical elements by bombarding it with nuclear particles or gamma rays and identifying the resultant radiations.

ac·ti·ve (āk'tiv) *adj.* 1. Being in physical motion: *active fish in the aquarium*. 2. Functioning or capable of functioning. 3a. Marked by energetic activity; busy: *active stock and bond markets*; *spent an active day sightseeing*. b. Involving or requiring physical exertion and energy: *an active workout at the gym*. 4a. Being in a state of action; not quiescent: *active hostilities along the border*. b. Erupting or liable to erupt; not dormant: *an active volcano*. 5a. Marked by or involving direct participation: *took an active interest in politics*; *played an active role on the committee*. b. Currently in use or effect: *an active membership*. c. Openly acknowledged or expressed: *an active dislike of the new neighbors*. 6. Producing an intended action or effect: *active ingredients*. 7. Grammar a. Indicating that the subject of the sentence is performing or causing the action expressed by the verb. Used of a verb form or voice. b. Expressing action rather than a state of being. Used of verbs such as *run*, *speak*, and *move*. 8. Producing profit, interest, or dividends: *active accounts*; *active stocks*. 9. Electronics a. Being a source of electrical energy, as a generator. b. Capable of converting or amplifying voltages or currents, as a diode or transistor. 10. Being on full military duty and receiving full pay. ♦ *n.* 1. Grammar a. The active voice. b. A construction or form in the active voice. 2. A participating member of an organization: *union actives*. [Middle English *actif*, from Old French, from Latin *activus*, from *actus*, past participle of *agere*, to drive, do. See **ag-** in Appendix I.] —**ac·ti·ve·ly** *adv.* —**ac·ti·ve·ness** *n.*

Synonyms *active, energetic, dynamic, vigorous, lively* These adjectives mean engaged in activity. **Active** means moving, doing, or functioning: *an active toddler*; *an active imagination*; *saw active service in the army*. **Energetic** suggests sustained enthusiastic activity: *an energetic competitor*. **Dynamic** connotes energy and forcefulness that often inspires others: *a dynamic leader*. **Vigorous** implies healthy strength and robustness: *a vigorous crusader against drunk driving*. **Lively** suggests animated alertness: *a lively interest in politics*.

active immunity *n.* Immunity resulting from the development of antibodies in response to the presence of an antigen, as from vaccination or exposure to an infectious disease.

ac·ti·ve·ma·trix (āk'tiv-mā'trīks) *adj.* Of or relating to a liquid-crystal display that uses individual transistors to control the charges on each cell in the liquid-crystal layer.

active site *n.* The part of an enzyme at which catalysis of the substrate occurs.

active transport *n.* The movement of a chemical substance through a gradient of concentration or electrical potential in the direction opposite to normal diffusion, requiring the expenditure of energy: *active transport across a cell membrane*.

ac·ti·vin (āk'tā-vīn, āk-tiv'in) *n.* A polypeptide growth factor that is synthesized in the pituitary gland and the gonads and stimulates the secretion of follicle stimulating hormone. [ACTIV(ATE) + (INHIB)IN (from its activating follicle stimulating hormone).]

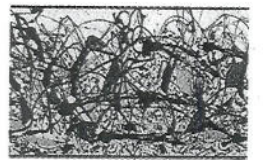
ac·ti·vism (āk'tā-vīz'm) *n.* The use of direct, often confrontational action, such as a demonstration or strike, in opposition to or support of a cause. —**ac·ti·vist·ic** *adj.*

ac·ti·vist (āk'tā-vīst) *n.* A proponent or practitioner of activism: *political activists*. ♦ *adj.* 1. Of, relating to, or engaged in activism. 2. Of, relating to, or being an activist.

ac·ti·vi·ty (āk-tiv'i-tē) *n., pl. -ties* 1. The state of being active. 2.



actinoid
a starfish



action painting
detail from *Summertime*:
Number 9A, 1948, by
Jackson Pollock

ā pat	oi boy
ā pay	ou out
ār care	ōo took
ā father	ōo boot
ē pet	ū cut
ē be	ūr urge
ī pit	th thin
ī pie	th this
ī pier	hw which
ō pot	zh vision
ō toe	ā about, item
ō paw	♦ regionalism

Stress marks: ' (primary);
' (secondary), as in
dictionary (dīk'shā-nēr'ē)

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ac-ti-vate \ˈaktə,vāt, usu -äd-+V\ *vb* -ED/-ING/-S [*active* + *-ate*] *vt* : to make active or more active: as **a** (1) : to render (molecules) capable of reaction or to increase the reactivity of (parts of molecules) by the presence of neighboring groups (2) : to convert (a compound, as a provitamin or enzyme) into an active form or different compound, esp. into one that has a particular biological action (~ ergosterol by irradiation to vitamin D₂ for use in treating rickets) **b** : to render (a substance) radioactive, luminescent, photosensitive, or photoconductive by treatment (as by radiation or electric oscillation)

or by admixture of an impurity **c** (1) : to alter the nature of the surface of (specific mineral particles in the flotation of an ore pulp) so that certain reagents will adhere (2) : to treat (materials, as carbon, clay, alumina, silica gel) so as to improve esp. adsorptive properties (as for use in removing colors from sugar solutions and other solutions, chemicals from vapor lines, and odors from water) **d** : to treat by prolonged aeration so as to favor the growth of organisms that will decompose (sewage) **e** (1) : to start development of (an egg) by fertilization or experimentally by chemicals (2) : to stimulate to sexual activity : induce heat or rut in **f** : to set up or formally institute (a military unit) with the necessary personnel and equipment ~ *vi* : to become active **syn** see VITALIZE



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activate

• **verb** 1 make active or operative. 2 convert (a substance, molecule, etc.) into a reactive form.

— DERIVATIVES **activation** noun **activator** noun.

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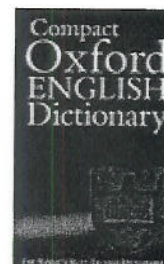
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activate v. activated ◊ activating ◊ activates < 'ákt&"vAt > : 1. To make active or more active; "activate an old file." 2. To enable or turn on; "they activated the siren by pushing a button." 3. To make (*substances*) radioactive. 4. To make more adsorptive; of metals. 5. To aerate (*sewage*) so as to favor the growth of organisms that decompose organic matter; **SYN:** aerate.

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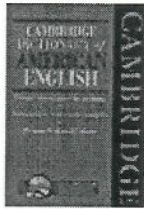
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Definition

activate

[Show phonetics]

verb [T]

to cause (something) to start working

Something activated the car alarm.

In sports, to activate is to bring a player back to the regular team, usually after they have had an injury which has healed.

activation

[Show phonetics]

noun [U]

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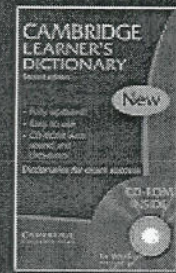
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